ARTIFICIAL INTELIGENCE AND MACHINE LEARNING

AIML Monthly Newsletter: 29-09-25 to 31-10-25

1 Department Activities

1.1 Foundations on Embedded Systems Design by AI/ML Department

The Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), SOE, organized a special class, “Foundations on Embedded Systems Design”, on **25th October, 2025**. The session was organized and delivered by **Dr. V.K.R.Rajeswari Satuluri**, Assistant Professor, CSE (AI&ML).

DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

"FOUNDATIONS ON EMBEDDED SYSTEMS DESIGN"

A special class designed to provide in-depth knowledge and practical skills in ESD

TARGET AUDIENCE: II Year CSE – AI & ML

Resource Person and Organizer : Dr.V.K.R.Rajeswari Satuluri
Assistant Professor-CSE (AI&ML), DSU

Date
25th October, 2025
Time :
8:30 to 10:20 A.M
Venue: LH3

TOPICS COVERED

1. Fundamentals of Embedded Systems
2. Classification & Major Application Areas
3. Characteristics & Quality Attributes
4. Application-Specific & Domain-Specific Systems
5. General Purpose & Domain-Specific Processors
6. Memory Systems & Selection
7. Interfacing with Sensors & Actuators

Patrons
Dr. B.S. Satyanarayana, Vice Chancellor, DSU
Dr. Prakash S, Pro Vice Chancellor, DSU
Dr. Puttamadappa, Registrar, DSU
Dr. Udaya Kumar Reddy, Dean, SOE, DSU

Convenor
Dr. Jayavrinda Vrindavanam V
Professor & Chairperson
CSE (AI & ML), DSU

Chief Patrons
Dr. Hemachandra Sagar, Chancellor, DSU
Dr. Premachandra Sagar, Pro-Chancellor, DSU

The class, held in **LH3**, was specifically designed for and attended by **II Year CSE - AI & ML** students. The event focused on providing students with in-depth knowledge and practical skills in Embedded Systems Design (ESD). The session covered a comprehensive range of topics, including the fundamentals of embedded systems, their classification and major application areas, characteristics and quality attributes, and application-specific processors.

The class also detailed general-purpose and domain-specific processors, memory systems, and selection, and concluded with the principles of interfacing with sensors and actuators. The initiative successfully provided students with a strong foundational understanding of embedded systems, enhancing their core engineering knowledge for future applications.

2 Student activities

2.1 Mr. Nandeesh NB (ENG23AM0047), Student, 5th Semester, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), along with his team, has secured the Local Award Winner recognition in the 2025 NASA International Space Apps Challenge held at Dayananda Sagar University on 4th and 5th October, 2025.

2.2 **Mr. Nandeesh NB (ENG23AM0047)**, Student, 5th Semester, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), along with his team, has secured the Runner Up position in Hackverse, a 24-hour hackathon (AI&ML theme) held during the TechFusion 2025 inter-college technical fest, organized by Dayananda Sagar Academy of Technology & Management (DSATM), Bengaluru, on 14th and 15th October, 2025.


GPS Map Camera
Badamanavarathekaval, Karnataka, India
Block-a, Dayananda Sagara Educational Institution,
Badamanavarathekaval, Karnataka 560082, India
Lat 12.825107° Long 77.514334°
Wednesday, 15/10/2025 05:46 PM GMT +05:30
Google

DAYANANDA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT

(Affiliated to Visvesvaraya Technological University, Belagavi & Accredited by NBA New Delhi)

(All B.E Courses Accredited by NBA New Delhi)

Opp. Art of Living, Udayapura, Kanakapura Main Road, Bengaluru-560082

TECHFUSION

INTER COLLEGE TECHNICAL FEST

IEEE BANGALORE SECTION

CERTIFICATE

Of Appreciation

This is to certify that

NANDEESH.N.B

has emerged as the RUNNER UP of TechFusion 2025, organized by the Department of Computer Science and Engineering in IoT, Cybersecurity including Blockchain Technology at Dayananda Sagar Academy of Technology and Management, Bengaluru, held from October 13-15, 2025.

HACKVERSE

EVENT NAME

VADE GOPAL

TEAM NAME

DR. MADHUMALA R B

Convener

DR. M RAVISHANKAR

Principal

OCULUS AEGIS

2.3 IIIrd year Students from the Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), **Saumyaa Priyadarshinee, Sonika D, Vignesh B S, and Vishruth Janardhan,** successfully presented their project titled "'HEALTHCAREBOT': A SMART PATIENT TRIAGE & MEDICAL FREQUENTLY ANSWERED QUESTIONS (FAQ) ASSISTANT" at the IEEE Mini Project Symposium 2025.


IEEE Mini Project
Symposium 2025
GPS Map Camera
Mysuru, Karnataka, India
8q7c+w43, Mysuru, Karnataka 570028, India
Lat 12.314766° Long 76.770312°
Saturday, 25/10/2025 10:05 AM GMT +05:30
Google

The project was guided by **Dr. V.K.R.Rajeswari Satuluri**, Assistant Professor, CSE (AI&ML). The symposium was organized by the IEEE CEDA Bangalore Chapter in association with the IEEE Bangalore Section and IEEE Mysore Subsection, and hosted at ATME College of Engineering, Mysuru, on 25th October 2025.

2.4 IInd year Students from the Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), **Yashwanth K, Racahana B S, Shravansingh, and Maanya Shree S,** successfully presented their project titled "SATELLITE-DRIVEN FORECASTING OF INTEGRATED AIR QUALITY AND WEATHER HAZARDS IN URBAN CENTERS" at the IEEE Mini Project Symposium 2025.

The project was guided by **Dr. V.K.R.Rajeswari Satuluri**, Assistant Professor, CSE (AI&ML). The symposium was organized by the IEEE CEDA Bangalore Chapter in association with the IEEE Bangalore Section and IEEE Mysore Subsection, and hosted at ATME College of Engineering, Mysuru, on 25th October 2025.

3 Faculty activities & Achievements

3.1 Dr. Jayavrinda Vrindavanam, HoD and Professor, Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), and her PhD scholar, Mr. H A Sharath, Assistant Professor, Department of Computer Science and Engineering, have published a paper titled “Quantum-Resilient Cryptography: A Survey on Classical and Quantum Algorithms”. The paper was published in the IEEE Access journal, a high-impact journal with an Impact Factor of 3.4 and a Q1 (SJR) Country Rank. IEEE Access Journal Link : https://ieeexplore.ieee.org/document/11175376

IEEE Access

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SURVEY

Quantum-Resilient Cryptography: A Survey on Classical and Quantum Algorithms

H. A. SHARATH[1], JAYAVRINDA VRINDAVANAM[2], SASWATI DANA[3], AND S. N. PRASAD[4], (Senior Member, IEEE)

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[2]Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), Dayananda Sagar University, Bengaluru, Karnataka 562112, India
[3]IBM India Research Laboratory, Bangalore 560045, India
[4]Department of Electronics and Communication Engineering, Manipal Institute of Technology Bengaluru, Manipal Academy of Higher Education, Manipal 576104, India

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ABSTRACT The rapid advancement of quantum computing is poised to disrupt the foundations of classical cryptography, calling into question the long-term security of widely used algorithms. Classical cryptographic techniques, including symmetric key algorithms like DES, 3DES and AES, asymmetric schemes such as RSA and ECC, and essential primitives like hash functions and the One-Time Pad (OTP), have been the cornerstone of secure digital communication since their inception. However, the progress of quantum algorithms, spearheaded by Shor and Grover, poses serious threats to these schemes, necessitating a shift in cryptographic design. This paper presents an all-encompassing review of classical cryptographic techniques, along with emerging post-quantum cryptographic (PQC) algorithms that have been developed to provide quantum-resistant security while maintaining compatibility with classical infrastructure. Concurrently, the quantum key distribution (QKD) introduces a radical shift, leveraging quantum mechanics principles to attain unconditional security. This paper elaborates both Discrete Variable (DV-QKD) and Continuous Variable (CV-QKD) approaches, highlighting their operational principles and security models. By providing a relative analysis of classical cryptographic methods, PQC, and quantum cryptography, including QKD protocols and quantum-safe primitives, this work targets to provide a consolidated insight into modern cryptographic landscape and further research toward secure communication in the quantum era.

INDEX TERMS DES, AES, RSA, Blowfish, quantum cryptography, quantum computing, post-quantum cryptography (PQC), Lattice-based cryptography, CRYSTALS-Kyber, CRYSTALS-Dilithium, code-based cryptography, McEliece, hash-based cryptography, SPHINCS+, quantum key distribution (QKD), BB84, GG02.

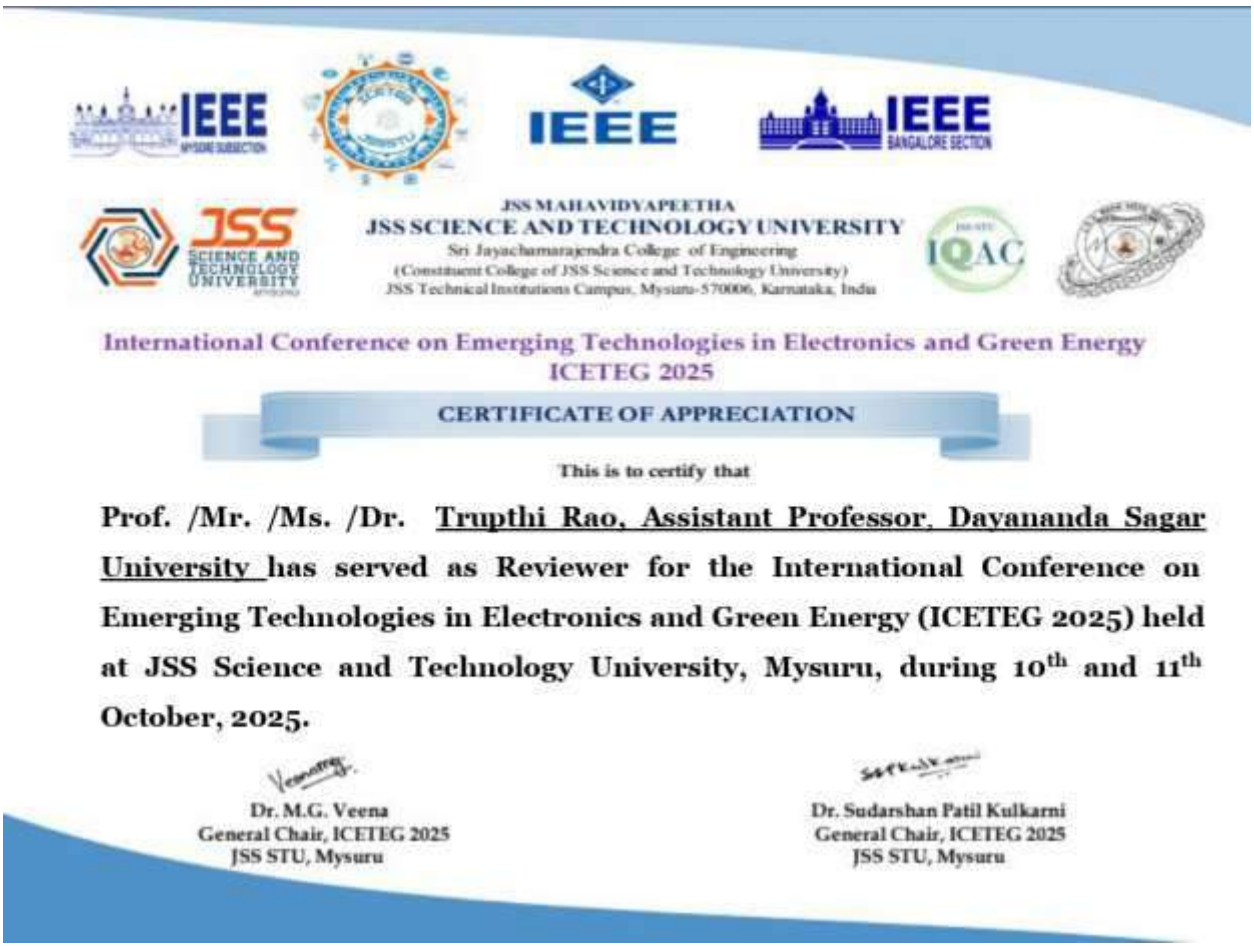
I. INTRODUCTION

With advancements in science and technology, modern cryptography has undergone a transformative evolution in both theory and practice. Over the past century, three major milestones have shaped its development. First, the shift from manual encryption to cipher machines significantly increased cryptographic complexity. Next, the integration of rigorous mathematical principles established cryptography as a scientific discipline, leading to the emergence of asymmetric cryptography. Most recently, driven by the demand for heightened security, quantum cryptography (QC), leveraging the laws of quantum mechanics, has been evolved.

This paper, through Sections II to VII, provides a structured survey of cryptographic algorithms and mechanisms that form the foundation of secure communication systems. Section II outlines classical cryptography. Section III focuses on core cryptographic algorithms, including symmetric encryption (e.g., AES), asymmetric schemes (e.g., RSA), the theoretically unbreakable One-Time Pad (OTP), and

The associate editor coordinating the review of this manuscript and approving it for publication was Siddhartha Bhattacharyya.

3.2 Prof. Trupthi Rao, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), has served as a Reviewer for the International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG 2025) held at JSS Science and Technology University, Mysuru, during 10th and 11th October, 2025.



JSS MAHAVIDYAPEETHA
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Sri Jayachamarajendra College of Engineering
(Constituent College of JSS Science and Technology University)
JSS Technical Institutions Campus, Mysuru-570006, Karnataka, India

International Conference on Emerging Technologies in Electronics and Green Energy
ICETEG 2025

CERTIFICATE OF APPRECIATION

This is to certify that

Prof. /Mr. /Ms. /Dr. Trupthi Rao, Assistant Professor, Dayananda Sagar University has served as Reviewer for the International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG 2025) held at JSS Science and Technology University, Mysuru, during 10th and 11th October, 2025.

Dr. M.G. Veena
General Chair, ICETEG 2025
JSS STU, Mysuru

Dr. Sudarshan Patil Kulkarni
General Chair, ICETEG 2025
JSS STU, Mysuru

3.3 Dr. Bahubali Shiragapur, Professor, AI & ML Department, School of Engineering, Dayananda Sagar University (DSU), Bangalore, has delivered a Hands-on session on "Empowering Pharmaceutical Research with Machine Learning and Large Language Models (LLMs)" at the Guest Talk organized by the Department of Pharmacognosy, Faculty of Pharmacy, held at Ramaiah University of Applied Sciences (RUAS), Bengaluru, on 9th October, 2025.

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Faculty of Pharmacy

Department of Pharmacognosy

Cordially invites you to attend a Guest Talk on

"EMPOWERING PHARMACEUTICAL RESEARCH WITH MACHINE LEARNING & LLM"

RESOURCE PERSON

Dr. Bahubali Shiragapur
Professor
School of Engineering
AI & ML Department
DSU, Bangalore

Venue: FPH, Level 3, Lecture Hall 1

Date and Time : 09-10-2025 @ 2.00 PM

Coordinator – Dr. R. Gowri

Convenor – Dr. Ashoka Babu VL

3.4 Dr. Bahubali Shiragapur, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, has delivered a Faculty Development Program (FDP) session on "Intelligent Medical Imaging & Modalities" as part of the IEEE FDP Series, organized by KLE Technological University, Hubballi.

3.5 Prof. Bhuvana Mohini T. N, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), Dayananda Sagar University - School of Engineering, presented her research paper titled “Enhanced Hybrid Deep Learning Model for Alzheimer Disease Diagnosis” at the IEEE International Conference on Communication, Computer, and Information Technology (IC3IT-2025).The conference was organized by Mysuru Royal Institute of Technology, Mandya, in association with IEEE Bangalore Section and IEEE Mysore Subsection on 24th and 25th October 2025.The presented work focuses on leveraging hybrid deep learning architectures for improving early diagnosis of Alzheimer’s disease, addressing one of the most critical challenges in medical image analysis.


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This is to certify that Dr./Prof./Mr./Ms

Bhuvana Mohini T N

has Presented Paper entitled

Enhanced Hybrid Deep Learning Model for Alzheimer Disease Diagnosis

in the IEEE International Conference on Communication, Computer, and Information Technology (IC3IT-2025) organized at Mysuru Royal Institute of Technology, Mandya, India on 24th and 25th October 2025 in association with IEEE Bangalore Section and IEEE Mysore Subsection.

IEEE BANGALORE SECTION

IEEE MYSORE SUBSECTION

Dr. ABHINANDHAN K S
Principal, MRIT, Mandya

3.6 Dr. V.K.R.Rajeswari Satuluri, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence & Machine

Learning), Dayananda Sagar University - School of Engineering, has actively participated and successfully guided and presented 3 student projects 1) Healthcarebot': A Smart Patient Triage & Medical Frequently Answered Questions (Faq) Assistant 2) Proactive Health Management: An Ai-Powered Web Application 'VytalAI' For Early Prediction Of Lifestyle Disorders, 3) Satellite-Driven Forecasting Of Integrated Air Quality And Weather Hazards In Urban Centers at the IEEE Mini Project Symposium 2025. The symposium was organized by the IEEE CEDA Bangalore Chapter in association with the IEEE Bangalore Section and IEEE Mysore Subsection, and hosted at ATME College of Engineering, Mysuru, on 25th October 2025. The event served as a platform for participants to showcase innovative projects, fostering technical knowledge sharing and collaboration.